RECEIVED
CENTRAL FAX CENTER

JAN 0 5 2006

II. AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (canceled)

Claim 2 (previously presented): The method as set forth in claim 5, further comprising:

(a) using said computer to compare said duty cycle to a predefined threshold; and

(b) if said duty cycle exceeds said threshold, recommending modifications to said proposed vehicle air system.

Claim 3 (previously presented): The method as set forth in claim 5, wherein said time period is equal to an average period of time that said proposed vehicle air system is expected to be operated per day.

Claim 4 (canceled)

Claim 5 (currently amended): A method of designing a vehicle air system comprising:

(a) inputting vehicle use information that describes expected operation conditions of a proposed vehicle air system over a time period;

(a) (b) using a computer to simulate operation of a said proposed vehicle air system over a said time period, wherein said proposed vehicle air system comprises an air compressor and a pneumatically operable device, wherein said step of simulating operation of a said proposed vehicle air system over a said time period includes: simulating selective operation of said air compressor to add air to said proposed vehicle air system; and simulating selective operation of said pneumatically operable device to exhaust air from said proposed vehicle air system[[;]] at intervals that vary depending upon said inputted vehicle use information;

(b) (c) using said computer to calculate a duty cycle of said air compressor over said time period and to output said duty cycle[[;]].

(c) inputting vehicle use information that describes expected operation conditions of said proposed vehicle air system over said time period, wherein said step of simulating selective operation of said pneumatically operable device to exhaust air from said proposed vehicle air system includes simulating operation of said pneumatically operable device at intervals that vary depending upon said input vehicle use information.

Claim 6 (original):   The method as set forth in claim 5, wherein said pneumatically operable device comprises a pneumatic suspension, and wherein said vehicle use information includes expected road roughness information.

Claim 7 (original):   The method as set forth in claim 5, wherein said pneumatically operable device comprises a pneumatic brake system, and said vehicle use information includes brake application pressure information.

Claim 8 (currently amended):   The method as set forth in claim 5, wherein said pneumatically operable device comprises a pneumatic windshield wiper system, and wherein said vehicle use_information comprises climate wetness information.

Claim 9 (canceled)

Claim 10 (currently amended): The method as set forth in claim 17, wherein said step of outputting data comprises:

(a) calculating a duty cycle that represents a percentage of said simulation time period that simulated operation of said air compressor [[to]]is carried out to simulate addition of air to said proposed vehicle air system; and

(b) outputting said duty cycle.

Claim 11 (previously presented): The method as set forth in claim 10, further comprising:

(a) comparing said duty cycle to a predefined threshold; and

(b) recommending modification of said proposed vehicle air system if said duty cycle exceeds said threshold.

Claim 12 (previously presented): The method as set forth in claim 10, wherein said step of inputting data that simulate a proposed vehicle air system includes inputting data that describe a plurality of simulated pneumatically operable devices of said proposed vehicle air system, and wherein said step of using said computer to simulate operation of said proposed vehicle air system over a simulation time period includes selectively simulating exhaustion of air from said proposed vehicle air system in response to simulated operation of said plurality of pneumatically operable devices, said method further comprising:

(a) determining a total amount of air exhausted from said vehicle air system during said simulation time period;

(b) determining the percentage of the total amount of air exhausted attributable to each of said plurality of pneumatically operable devices; and

(c) for each of said plurality of pneumatically operable devices, displaying the percentage of the total amount of air exhausted attributable to that device.

Claim 13 (previously presented): The method as set forth in claim 17, wherein said step of inputting data further comprises: inputting data that describe a simulated air dryer of said proposed vehicle air system.

Claim 14 (currently amended): The method as set forth in claim 13, wherein said step of inputting data that describe a simulated pneumatically operable device comprises: inputting data that describe at least one of: a simulated air leak; a simulated pneumatic suspension; a simulated pneumatic kneeling apparatus; a simulated pneumatic windshield wiper system; a simulated pneumatic door system; a simulated pneumatic seat; and a simulated pneumatic gear shift apparatus.

Claim 15 (previously presented): The method as set forth in claim 17, wherein said step of inputting data that describe a simulated pneumatically operable device comprises:

(a) inputting data that describe the amount of air used by said pneumatically operable device; and,

(b) inputting data that describe the volume from which said pneumatically operable device receives air for operation.

Claim 16 (canceled)

Claim 17 (currently amended): A method for predicting performance of a vehicle air system comprising:

(a) inputting into a computer, data that simulate a proposed vehicle air system, wherein said inputted data describe a simulated: (i) air compressor; (ii) pneumatically operable device; (iii) plurality of pneumatically operable devices, or and (iii) (vi) proposed use of a vehicle on which said proposed vehicle air system is to be used, wherein said simulated proposed use further includes data describing at least one of: road surface roughness, number of vehicle stops per day, number of parking brake applications per day; environmental wetness conditions encountered by said vehicle, number of gear shifts performed by said vehicle per day, number of door open/close cycles performed by said vehicle per day, and number of kneel cycles performed by said vehicle per day;

(b) using said computer to simulate the operation of said proposed vehicle air system over a simulation time period, said simulated operation including: (i) selectively simulating exhaustion of air from said proposed vehicle air system in response to simulated operation of said pneumatically operable device; or (ii) selectively simulating addition of air to said proposed vehicle air system in response to simulated operation of said air compressor; and

(c) outputting data from said computer that describe said simulated operation of said proposed vehicle air system.

Claim 18 (canceled)

Claim 19 (currently amended): A method for predicting vehicle air system performance comprising:

(a) inputting data that describe a proposed vehicle air system including at least an air compressor and at least one pneumatically operable device;

(b) receiving input data related to a capacity of the ~~proposed~~ air compressor to supply air to the proposed vehicle air system;

(c) receiving input data related to a cut-in pressure of said proposed vehicle air system below which said ~~proposed~~ air compressor is considered operative to add air to said proposed vehicle air system;

(d) receiving input data related to a cut-out pressure of said proposed vehicle air system above which operation of said ~~proposed~~ air compressor to add air to said proposed vehicle air system is considered terminated;

(e) receiving input data related to a usage rate at which said at least one pneumatically operable device depletes air from said proposed vehicle air system when said pneumatically operable device is considered to be in use;

(f) receiving input data related to a frequency of operation of said pneumatically operable device, wherein said input data related to a frequency of operation of said pneumatically operable device further comprises at least one of climate information and road roughness information;

(g) determining a period of operation for the proposed vehicle air system;

(h) simulating operation of said proposed vehicle air system over said period of operation by:

(i) calculating data that represent air depleted from said proposed vehicle air system based upon the usage rate and frequency of operation of said at least one pneumatically operable device; and,

(ii) calculating data that represent air added to said proposed vehicle air system by said ~~proposed~~ air compressor based upon the cut-in and cut-out pressures;

(i) recording data that represent a duration of time of said period of operation that said air compressor is considering to be adding air to said proposed vehicle air system; and,

(j) calculating data that describe a duty cycle of said air compressor, said duty cycle related to a percentage of time said air compressor is considered to be operated during said period of operation.

20 (previously presented): The method as set forth in claim 19, wherein said at least one pneumatically operable device is a brake system, and said step of receiving input data related to a frequency of operation of said pneumatically operable device comprises receiving information related to a frequency of break applications.